BRUHAT BANGALORE MAHANAGARA PALIKE

YELAHANKA ZONE

BYATARAYANAPURA DIVISION

BYATARAYANAPURA SUB DIVISOIN

Name of the Work : **Improvements to roads and drains at Agrahara And Agrahara Layout, kattigenahalli in ward No.06 Byatarayanapura Sub Division**

EMB
Detail Measurement

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BRUHATH BANGALORE MAHANAGARAPALIKE

YELAHANKA ZONE

1st and Final Bill

Detail Measurements

Name of work:- Improvements to roads and drains at Agrahara And Agrahara Layout, kattigenahalli in ward No.06 Byatarayanapura Sub Division

Work Order No: BBMP/EE/BTP/WO/195/2022-23 dt: 27.03.2023

JOB NUMBER: 006-23-000011

Estimate Cost: 80.00 lakhs.

As No: AS/EE(BTP)/43/2022-23 Dt: 21.02.2023

Ts No :TS/ CE(YNK) /98/2022-23 dt : 16.09.2022

Name of Contractor : Vasanth R

Sl No	Description of work	Unit	Mesurement				Qty	Rate	Amount
			No.	L	B	D			
	Removing and refixing stone slabs of drains and pointing in CM (1:3) (Data Rate)								
	BS Drain	Sqm							
	Krishna nagar								
	Main Road (RHS)								
	Ch 0-30		1	30.00	0.75		22.50		
	Ch 30-60		1	30.00	0.75		22.50		
	Ch 60-73		1	13.00	0.75		9.75		
	Ch 80-110		1	30.00	0.75		22.50		
	Ch 110-140		1	30.00	0.75		22.50		
	Ch 140-170		1	30.00	0.75		22.50		
	Ch 170-200		1	30.00	0.75		22.50		
1	Ch 200-230		1	30.00	0.75		22.50		
	Ch 230-260		1	30.00	0.75		22.50		
	Ch 260-290		1	30.00	0.75		22.50		
	Ch 290-317		1	27.00	0.75		20.25		
	Main Road (LHS)								
	Ch 0-30		1	30.00	0.75		22.50		
	Ch 30-60		1	30.00	0.75		22.50		
	Ch 60-73		1	13.00	0.75		9.75		
	Cross Road-1 (LHS)		1	24.00	0.60		14.40		
	Cross Road-1 (RHS)		1	24.00	0.60		14.40		
						Total	301.65		
	Total						301.65	108.78	32814.00
	Removing and resetting of footpath slab (Data Rate)								
	Precast Cover Slab	Sqm							
	Kattigenhalli								
	Near Over head Tank(LHS)								
	Ch 0-30		1	30.00	0.90		27.00		
	Ch 30-60		1	30.00	0.90		27.00		
	Ch 60-90		1	30.00	0.90		27.00		
	Ch 90-110		1	20.00	0.90		18.00		
	Near Over head Tank(RHS)								
	Ch 0-30		1	30.00	0.90		27.00		
	Ch 30-60		1	30.00	0.90		27.00		
2	Ch 60-90		1	30.00	0.90		27.00		
							180.00		

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	Ch 90-110		1	20.00	0.90		18.00		
	Cross road 2		1	35.00	0.90		31.50		
	Cross Road-3 Near Doddamma Temple								
	Ch 0-30		1	30.00	0.75		22.50		
	Ch 30-60		1	30.00	0.75		22.50		
	Ch 60-90		1	30.00	0.75		22.50		
	Ch 90-120		1	30.00	0.75		22.50		
	Ch 120-150		1	30.00	0.75	162	22.50		72254.00
	Total						342.00	211.27	72255.00
3	Earth work excavation by manual means for drains,canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenances required to complete the work. (PWD SR 2021-22 Vol -I Pg No 5 item								
	Qty Recorded as per Premeasurement item No. 3. Page 1 of 2								78055.00
	Total						424.35	183.94	78056.00
4	Providing granite slabs of selected quality roughly dressed havinf a size of 7.5cms thick and fixed in cement mortar (1:6) including fixing curing ete., complete.(P.No.27,I.No.5.31.1)								
	Krishna nagar	Sqm							
	Main Road(RHS)								
	Ch 30-60		1	30.00	0.75		22.50		
	Ch 80-110		1	30.00	0.75		22.50		
	Ch 170-200		1	30.00	0.75		22.50		
	Ch 260-290		1	30.00	0.75		22.50		
	Main Road(LHS)								
	Ch 30-60		1	30.00	0.75		22.50		
	Ch 60-72		1	12.00	0.75		9.00		
	Cross Road-1		1	10.00	0.75		7.50		
	Total						129.00	667.06	86051.00
5	Providing and laying in position plain cement concrete Mix 1:3:6 (M10) for levelling course for all works in foundation. Using 40 mm nominal size graded crushed coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (PWD SR 2021-22 Vol -I Pg 15 item no 2.1.3)								
	Qty Recorded as per Premeasurement item No. 5. Page 2/3								188827.00
	Total						34.38	5492.35	188811.00

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6	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. M20 (The cost of steel reinforcement & formwork to be paid separately) (PWD SR 2021-22 Vol -I Pg 17 item no 2.4.2)								
	Qty Recorded as per Premeasurement item No. 6. Page 5/6								428945/=
	Total						69.22	6196.84	428958.00
7	Supplying, Fitting and Placing TMT Fe550 bar Reinforcement in sub-structure complete as per Drawing and Technical Specifications. MORTH Specification NO.1600&2200 (PWD SR 2021-22 Vol -III Pg 99 item no								
	Qty Recorded as per Premeasurement item No. 7.								413807.00
	Total Page 3 to 5						4.54	91146.91	413977.00
8	Providing and Fixing pre cast covering Slab 100mm thick made out of CC , Jelly 20mm Down Size with steel reinforcement including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete as per Engineer incharge. (Data								
	Agrahara main road in front of government school	Sqm							
	Ch 0-15		1	15.00	0.90		13.50		
	Ch 15-30		1	15.00	0.90		13.50		
	Ch 30-45.5		1	15.50	0.90		13.95		
	RO Plant road								
	Ch 0-15		1.00	15.00	0.75		11.25		
	Ch 15-30		1.00	15.00	0.75		11.25		
	Ch 30-45		1.00	15.00	0.75		11.25		
	Ch 45-53		1.00	8.00	0.75		6.00		
	Bellikallu ranganath swami nilaya to dead end (RHS)	Sqm							
	Ch 0-15		1.00	15.00	0.90		13.50		
	Ch 15-30		1.00	15.00	0.90		13.50		
	Ch 30-46.3		1.00	16.30	0.90		14.67		
	Bellikallu ranganath swami nilaya to dead end (LHS)	Sqm							
	Ch 0-15		1.00	15.00	0.90		13.50		
	Ch 15-30		1.00	15.00	0.90		13.50		
	Kattigenhalli								
	Near Over head Tank(cross road-3)	Sqm							
	Ch 0-30		1	30.00	0.90		27.00		
	Ch 30-60		1	30.00	0.90		27.00		
	Ch 60-90		1	30.00	0.90		27.00		
	Cross road 2	Sqm	1	26.00	0.90		23.40		
	Cross Road-3 Near Doddamma Temple	Sqm							
	Ch 0-30		1	30.00	0.75		22.50		
	Ch 60-90		1	30.00	0.75		22.50		
	Total						298.77	1862.73	556528.00

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9	Providing and Fixing pre cast covering Slab 230mm thick made out of CC , Jelly 20mm Down Size with steel reinforcement including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete as per Engineer incharge. (Data								
	Culvert cover Slab	Sqm							
	Agrahara main road in front of government school		1	8.00	1.50		12.00		
	Kattigenahalli in front of muneshwara nilaya		1	7.00	1.20		8.40		
	Bellikallu ranganath swami nilaya to dead end (Kattigenahalli)		1	7.00	1.20		8.40		
	Omm circle to muneshwara nilaya		1	5.00	1.20		6.00		
	Krishna nagar		1	1.80	1.20		2.16		
	Total						36.96	4528.26	167365.00
10	Earth work in surface excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. In all kinds of								
	Qty Recorded as per Premeasurement item No. 10 page 6/7								
	Total						155.51	64.28	9997.00
11	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material by Mechanical Means using Hydraulic excavator with in all lifts and lead MORTH Specification No. 305.4.3 PWD SR 21-22 Vol III Pg no 15 Item No 3.5)								
	Qty Recorded as per Premeasurement item No. 11 page 7								5185.00
	Total						1309.41	3.96	5186.00
12	Construction of Embankment by excavating the available approved Gravel/Murrum deposited at a place or borrow pits during or prior excavation with all lifts and lead, transportation to site, spreading,grading to required slope and compacting to meet the requirement complete as per specifications, including cost of labour,rolling,water,all materials,usage& all other appurtenaces required to complete the work. (PWD SR								
	Qty Recorded as per Premeasurement item No. 12 page 8								
	Total						67.50	397.54	26834.00
13	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density MORTH Specification No. 406 (PWD SR 21-22 Vol III Pg no 24 Item No 4.27 (A)								
	Qty Recorded as per Premeasurement item No. 13 page 8								896759.00
	Total						378.79	2367.43	896749.00

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14	Providing and applying primer coat with SS1 grade Bitumen Emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.90 kg per m2 using mechanical means MORTH Specification No. 502 (PWD SR 21-22 Vol III Pg no 29 Item No 5.1 A (i))								
	Qty Recorded as per Premeasurement item No. 14								
	Total page 9						1646.90	41.53	68396.00
15	Providing and laying Dense Graded Bituminous Macadam with 40/60 TPH capacity HMP using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects (PWD SR 21-22 Vol III Pg no 33 Item No 5.12 (C))								
	Qty Recorded as per Premeasurement item No. 15								
	Total page 9/10						82.34	9037.56	744153.00 / 744196.00
16	Providing and applying tack coat with RS1 Bituminous Emulsion using emulsion pressure distributor at the rate of 0.25 kg/m2 on the prepared bituminous surface cleaned with mechanical broom MORTH Specification No. 503 (PWD SR 21-22 Vol III Pg no 29 Item No 5.4 (ii))								
	Qty Recorded as per Premeasurement item No. 16								
	Total page 10/11						1646.90	13.84	22793.00 / 22794.00
17	Providing and laying Bituminous Concrete with 40/60 TPH capacity hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 5.4 percent of mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade,level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects (PWD SR 21-22 Vol III Pg no 36 Item No								
	Kattigenhalli								
	Near Over head Tank								
	Omm circle to muneshwara								
	Ch 0-15	Cum	1	15.00	4.50	0.04	2.70		
	Ch 15-30	Cum	1	15.00	3.70	0.04	2.22		
	Ch 30-45	Cum	1	15.00	3.80	0.04	2.28		
	Ch 45-60	Cum	1	15.00	3.60	0.04	2.16		
	Ch 60-75	Cum	1	15.00	4.10	0.04	2.46		
	Ch 75-90	Cum	1	15.00	5.00	0.04	3.00		
	Ch 90-97.4	Cum	1	7.40	4.80	0.04	1.42		
	road turning	Cum	1	7.50	6.15	0.04	1.85		
	bellikallu ranganath swami								
	Ch 0-15	cum	1	15.00	6.70	0.04	4.02		
	Ch 15-30	cum	1	15.00	6.50	0.04	3.90		
	Ch 30-46.3	cum	1	16.30	6.50	0.04	4.24		
	extension portion	cum	1	7.80	4.30	0.04	1.34		
	Krishna Garden 3rd cross								
	Ch 0-15		1	15.00	4.80	0.04	2.88		
	Ch 15-30		1	15.00	4.70	0.04	2.82		
	Ch 30-45		1	15.00	4.60	0.04	2.76		
	Ch 45-60		1	15.00	4.60	0.04	2.76		
	Ch 60-80		1	20.00	4.40	0.04	3.52		
	Krishna nagar								
	Main Road								
	Ch 0-15	cum	1	15.00	4.50	0.04	2.70		
	Ch 15-30	cum	1	15.00	3.70	0.04	2.22		

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Ch 45-60	cum	1	15.00	3.80	0.04	2.28			
Ch 60-73.6	cum	1	15.00	3.60	0.04	2.16			
Cross Road-1	cum	1	13.60	4.10	0.04	2.23			
Ch 0-15									
Ch 15-23.5	cum	1	15.00	4.70	0.04	2.82			
ch 23.5-30	cum	1	8.50	5.00	0.04	1.70			
Total	cum	1	6.50	3.00	0.04	0.78			66338.00
						63.22	10493.22		663338.00

18 Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 g/ m2 area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35:2015.The finished surface to be level, uniform and free from streaks and holes. MORTH

Kattigenhalli	sqm							
Near Over head Tank								
Omm circle to muneshwara nilaya								
Ch 0-15		2	15.00	0.10		3.00		
Ch 15-30		2	15.00	0.10		3.00		
Ch 30-45		2	15.00	0.10		3.00		
Ch 45-60		2	15.00	0.10		3.00		
Ch 60-75		2	15.00	0.10		3.00		
Ch 75-90		2	15.00	0.10		3.00		
Ch 90-97.4		2	7.40	0.10		1.48		
road turning		2	7.50	0.10		1.50		
bellikallu ranganath swami nilaya to dead end								
Ch 0-15		2	15.00	0.10		3.00		
Ch 15-30		2	15.00	0.10		3.00		
Ch 30-46.3		2	16.30	0.10		3.26		
Krishna Garden 3rd cross								
Ch 0-15		2	15.00	0.10		3.00		
Ch 15-30		2	15.00	0.10		3.00		
Ch 30-45		2	15.00	0.10		3.00		
Ch 45-60		2	15.00	0.10		3.00		
Ch 60-80		2	20.00	0.10		4.00		
Krishna nagar								
Main Road								
Ch 0-15		2	15.00	0.10		3.00		
Ch 15-30		2	15.00	0.10		3.00		
Ch 30-45		2	15.00	0.10		3.00		
Ch 45-60		2	15.00	0.10		3.00		
Ch 60-73.6		2	13.60	0.10		2.72		
Cross Road-1		2				0.00		
Ch 0-15		2	15.00	0.10		3.00		
Ch 15-23.5		2	8.50	0.10		1.70		
ch 23.5-30		2	6.50	0.10		1.30		31651.00
Total						66.96	472.69	31652.00

19 Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately MORTH Specification No.

Qty Recorded as per Premeasurement item No. 19	page 11							53409.00
Total						127.98	417.32	53407.00

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20	Providing and laying in position plain cement concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately) Mix 1:5:10 Using 40 mm nominal size graded crushed coarse aggregates (PWD SR 21-22 Vol-I Pg no 15 Item No 2.11)								
	Qty Recorded as per Premeasurement item No. 20 Page 11/12								
	Total						107.94	4805.07	518666.00
21	Providing and constructing un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including construction joints, , primer, sealant , curing of concrete slabs for 14- days, and water finishing to lines and grade as per drawing and technical specification clause 1501 with all lead, lifts, loading & unloading charges, cost and conveyance of all materials, labour, equipments etc., complete MORTH Specification No.1501 as per the directions of the Engineer in charge of the work. (PWD SR 2021-22 Vol								
	Cross Road-3 Near Doddamma Temple	cum							
	Ch 0-15		1	15.00	3.35	0.15	7.54		
	Ch 15-30		1	15.00	3.25	0.15	7.31		
	Ch 30-45		1	15.00	3.00	0.15	6.75		
	Ch 45-60		1	15.00	3.65	0.15	8.21		
	Ch 60-75		1	15.00	3.15	0.15	7.09		
	Ch 75-90		1	15.00	4.15	0.15	9.34		
	Ch 90-105		1	15.00	4.75	0.15	10.69		
	Ch 105-120		1	15.00	5.1	0.15	11.48		
	Ch 120-135		1	15.00	4.10	0.15	9.23		
	Ch 135-150		1	15.00	5.00	0.15	11.25		
	Ch 150-152.5		1	2.50	3.35	0.15	1.26		
	Inside Agrahara govt school compound		1	30	3.50	0.20	5.81		
	Cross Road-3A Near Doddamma Temple		1	20.00	3.20	0.15	9.60		
	Beside Agrahara govt school compound		1	4.00	3.00	0.20	2.40		
							107.94		695103.00
	Total						107.94	6439.72	695112.00
22	Cutting transverse contraction joints 3 to 4 mm wide and depth 60mm in concrete slab using concrete cutting machine with diamond studded saw within 48 hours of casting of bay / slab etc. complete including subsequent widening of the groove 8 to 10 mm. wide at top having depth of 15 mm. as directed by Engineer incharge. MORTH Specification No. 602.6.3(PWD SR 2021-22 Vol -III Pg 146 item no 4)								
		m	51	3.60			183.60		
	Total						183.60	69.22	12709.00

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23	Providing to contraction joints polysuphide sealent (Pouring grade) confirming to BS : 5212 - 1989 into sawed groove widened at top for sealent reservoir of specified size and shape as per detailed drawing including fixing Polyethylene foam backer rod of required diameter (approx. 25% larger than the initial 3 mm.to 4 mm. joint) overlaid with bond breaking tape as per detailed drawing. Item includes cleaning the joints with water jet / air compressor and allowing joint to become thoroughly dry before sealent is applied and applying primer. (A) Contraction and longitudinal joints (15 mm. deep x 8mm.wide). MORTH								
		m	51	3.60			183.60		29958.00
	Total						183.60	163.17	29959.00
24	Loading and Unloading of Stone Boulder/Stone aggregates/ Sand/Kankar/Moorum. (Tipper 5.5 m3) (PWD SR 2021-22 Vol-III Page No.3, Item No.1.1A)								
	Qty Recorded as per Premeasurement item No. 14	Cum					707.84		82598.00
	Total Page 12						707.84	116.69	82599.00
25	Cost of Haulage Excluding Loading and Unloading Taking output 10 t load and lead 10 km = 100 t.km (PWD SR 2021-22 Vol-III Page No.3, Item No.1.4A)								
	Qty Recorded as per Premeasurement item No. 15 Page 12.	t.Km		890.82	1.28		1140.25		
	Total						1140.25	94.93	108244.00
								Grand Total	5994653.00
								GST Charges (18% of estimated cost)	1079038.00
								Total Amount	7073691.00

Assistant Engineer
BBMP

Assistant Executive Engineer
BBMP

Executive Engineer
BBMP

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